Laboratory	**Microcal Calibration Laboratory, Plot No. 66, Bajaj Nagar, Ambedkar Chowk, M.I.D.C. Waluj, Aurangabad, Maharashtra**
Accreditation Standard	**ISO/IEC 17025: 2005**
Certificate Number	**CC-2686** ***(in lieu of C-1388)*** **Page 1 of 4**
Validity	**30.05.2018 to 29.05.2020** **Last Amended on -**

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
	MECHANICAL CALIBRATION			
I.	**DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)**			
1.	Plain Plug Gauge/ Width Gauge/Flush Pin Gauge/Od Master[$]	Upto 100 mm 100 mm to 300 mm	1.9 µm 4.9 µm	Using Grade '0' Gauge Block Dial Comparator by Comparison method Linear Height Gauge & Long Gauge Block
2.	Snap Gauge[$]	1.5 mm to 100 mm 100 mm to 500 mm	1.1 µm 3.7 µm	Using Grade '0' Gauge Block, Long Gauge Block by Comparison method
3.	Measuring Pin[$]	Upto 20 mm	0.8 µm	Using Universal Length Measuring Machine by Comparison method
4.	External Micrometer[$] L.C.: 0.001 mm L.C.: 0.01 mm	 0 to 100 mm 100 mm to 500 mm	 1.3 µm 7.6 µm	Using Grade '0' Gauge Block, Long Gauge Block by Comparison method
5.	Depth Micrometer[$] L.C.: 0.001 mm	 0 to 300 mm	 9.4 µm	Using Grade '0' Gauge Block, Long Gauge Block, Surface Plate by Comparison method
6.	Plunger Type Dial Gauge[$] Probe With DRO L.C.: 0.001 mm L.C.: 0.0005 mm	 0 to 25 mm ± 0.10 mm	 1.0 µm 0.8 µm	Using Universal Length Measuring Machine by Direct measurement Grade '0' Gauge Block Dial Comparator

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
7.	Lever Type Dial Gauge[$] L.C.: 0.001 mm	0 to 2 mm	1.0 µm	Using Universal Length Measuring Machine by Direct measurement
8.	Dial Thickness Gauge[$] L.C.: 0.001 mm	Upto 50 mm	7.0 µm	Using Gauge Block Set by Comparison Method
9.	Dial Bore Gauge[$] (for Transmission Mechanism) L.C.: 0.001 mm	Upto 1 mm	6.0 µm	Using Universal Length Measuring Machine by Direct measurement
10.	Micrometer Setting Standards[$]	0 to 200 mm 200 mm to 500 mm	3.1 µm 6.2 µm	Using Grade '0' Gauge Block Dial Comparator, Linear Height Gauge by Comparison method
11.	Caliper[$] (Vernier/Dial/ Electronic) L.C.: 0.010 mm	0 to 300 mm 0 to 600 mm	10.8 µm 13.4 µm	Using Caliper Checker by Comparison method
12.	Height Gauge[$] (Vernier/Dial/ Electronic) L.C.: 0.010 mm	0 to 300 mm 0 to 600 mm	11.3 µm 13.7 µm	Using Caliper Checker & Surface Plate by Comparison method
13.	Plain Ring Gauge[$]	3 mm to 100 mm 100 mm to 300 mm	1.9 µm 3.3 µm	Using Universal Length Measuring Machine by Direct measurement
14.	Dial Snap Gauge[$] (Parallelism) L.C.: 0.0005 mm	0 to 200 mm	2.5 µm	Using Grade '0' Gauge Block Dial Indicator by Comparison method

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
15.	Feeler Gauge / (Thickness) Foil[$]	Upto 2 mm	1.9 µm	Using Grade '0' Gauge Block Dial Comparator by Direct Measurement (IS 3179-1990)
16.	V Block [$] Symmetricity & Parallelism & Squareness	Upto 200 mm	5.8 µm	Using Precision Mandrel & Lever Dial/Linear Height Gauge By Direct Measurement
17.	Depth Gauge-Vernier/Dial/ Electronic[$] L.C.: 0.010 mm	0 to 300 mm	17.3 µm	Using Caliper checker, Gauge Block Set, Surface Plate by Comparison method
18.	Thread Plug Gauge / Wear Check Plug Gauge (For Effective & Major Dia)[$]	2 mm to 150 mm	2.2 µm	Using Universal Length Measuring Machine, Measuring Pin by Comparison method
19.	Thread / Wear Check Ring Gauge (For Effective Dia) [$]	4 mm to 100 mm	2.0 µm	Using Universal Length Measuring Machine by Direct measurement
20.	Taper Plug Gauge Half Angle (Diameter at End/ Half Angle) [$]	Upto 100 mm	2.3 for dia 24 Sec for angle	Using Universal Length Measuring Machine by Comparison method
21.	Taper Ring Gauge (Diameter at end / Half Angle) [$]	5 mm to 100 mm	2.1 µm 21 sec	Using Universal Length Measuring Machine by Direct measurement
22.	Bevel Protector [$] L.C.: 5'	0°-90°-0°	5.4 min.	Using Angle Gauge Block Set & Surface Plate By Comparison Method "

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
23.	Three Point Micrometer [$] L.C.: 0.001 mm	6 mm to 100 mm	4.1 µm	Using Master Setting Ring Gauge By Comparison method
24.	Thread Measuring Wire[$]	0.170 mm to 6.5 mm	0.7 µm	Using Universal Length Measuring Machine
25.	Surface Plate[#]	2500 mm x 2500 mm	$2.7\sqrt{\frac{L+W}{125}}$ µm Where L & W is in mm	Using Sprit Level by Direct measurement
26.	Linear Height Gauge[#] (2 D-Height Gauge) (L.C.: 0.0001 mm) Squareness	 0 to 600 mm 0 to 300 mm	 4.5 µm 6.9 µm	Using Grade '0' Long Gauge Block Squareness Master By Comparison method
II.	**DIMENSION (PRECISION INSTRUMENTS)**			
1.	Caliper Checker[$]	0 to 600 mm	5.9 µm	Using Linear Height Gauge By Comparison Method
2.	Profile Projector[♣] (X-Y Travel) (Linear) L.C.: 1 µm Angular Magnification	 0 to 200 mm 0° to 360° 10x to 100x	 5.6 µm 3.6 Min of arc 1 %	Using Linear Glass Scale, Glass Graticules Slip Gauge, Digital Caliper, Angular Glass Scale/Angle Gauge Block

*** Measurement Capability is expressed as an uncertainty (±) at a confidence probability of 95%**
[$]Only in Permanent Laboratory
[♣]Only for Site Calibration
[#] The laboratory is also capable for site calibration however, the uncertainty at site depends on the prevailing actual environmental conditions and master equipment used.

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